

REMARKS/ARGUMENTS

Claims 1, 5, 7 and 8 have been amended. Claim 2 has been canceled and the contents incorporated into independent claim 1. Claims 1 and 3-8 remain in the application.

**Claim Rejections – 35 U.S.C. §112**

Claims 5-6 are rejected under 35 U.S.C. §112, second paragraph. Claim 5 has been amended per the Examiner's recommendation. The rejection of claim 5 is now overcome. The amendment to claim 5 is likewise believed to overcome the rejection as applied to claim 6. Applicant respectfully requests that the rejection now be withdrawn.

**Claim Rejections – 35 U.S.C. § 103**

*Claims 1-8 were rejected under 35 U.S.C. §103 as being unpatentable over Yeap (USPN 4,118,601) in view of Wong et al. (USPN 5,881,103) and Eatwell et al.(USPN 5,481,615).*

Applicant amends in part and traverses in part. None of the three references teach or suggest calibrating both the microphone and the speaker. Applicant specifically claims in independent claim 1 the step of:

adjusting first coefficients in at least one digital signal processor connected to the microphone for a desired microphone frequency response based upon the input of pseudo random acoustical noise;

adjusting second coefficients in the at least one digital signal processor for a desired internal speaker frequency response based upon the input of the pseudo random acoustical noise;

None of the three cited references taken individually or in combination teach or suggest how to determine filter coefficients. Independent claim 1 of Applicant's invention recites:

adjusting first coefficients in at least one digital signal processor connected to the microphone for a desired microphone frequency response based upon the input of pseudo random acoustical noise;

Independent claim 5 recites:

compensating a plurality of filter coefficients in the at least one digital signal processor based upon differences in the source of the pseudo random noise and an output of the at least one digital signal processor;

Independent claim 7, as amended, recites:

adjusting a plurality of coefficients in the at least one digital signal processor based upon differences in the acoustic pseudo random noise and the output of the at least one digital signal processor to produce an optimized microphone output for the portable communications device.

Independent claim 8, as amended, recites:

adjusting a plurality of coefficients in the at least one digital signal processor based upon differences in the acoustic pseudo random noise and the output of the at least one digital signal processor to produce an optimized internal speaker output for the portable communications device.

Accordingly, each of the independent claims recites "how" the filter coefficients are adjusted – the cited reference do not.

Yeap teaches in col. 2, lines 53-55 that the loudspeaker system 16 is generally inside a room and that a match between the speaker system and the room is desired. Yeap accommodates

room acoustics (not a portable communication device) by calibrating a speaker using an already calibrated microphone (i.e. a golden microphone). Yeap does not teach or suggest calibrating the microphone. Applicant's invention does not require a "golden" reference (i.e. neither the speaker nor microphone need to be pre-calibrated or have known parameters). Likewise, Wong does not calibrate the microphone. Wong requires the use of a reference audio response corresponding to an ideal response for the accessory device as described in column 4, lines 29-30. No such ideal response is used in Applicant's invention. Eatwell also requires the use of a golden (calibrated) microphone. There is no teaching or suggestion of microphone calibration at all in Eatwell. Eatwell uses a known sensor model with microphone feedback - predefined but not well described, see FIG. 3. Eatwell uses equalization filter 2, adaptation block 12 and delay 4 to equalize the system based on a known system response 19. Eatwell does not teach how block 12 (adaptation block) operates. The loop sensor model 19 of Eatwell is not described but it is used as a "*fixed known model*". Applicant's invention, as claimed, utilizes a filter (209, 403) to tailor audio characteristics of an internal microphone (103) and internal speaker (301) within communication device (101) via an external speaker (105) and external microphone (303).

Accordingly, the rejection independent claims 1, 5, 7 and 8 are believed to be overcome. The dependent claims provide further imitations to what are believed to be allowable claims and hence are also in condition for allowance.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references.

The Applicants believe that the subject application, as amended, is in condition for allowance. Such action is earnestly solicited by the Applicants.

In the event that the Examiner deems the present application non-allowable, it is requested that the Examiner telephone the Applicant's attorney or agent at the number indicated below so that the prosecution of the present case may be advanced by the clarification of any continuing rejection.


Please charge any fees associated herewith, including extension of time fees, to 502117. Motorola, Inc. A Fee Transmittal is attached in duplicate.

Respectfully submitted,

SEND CORRESPONDENCE TO:

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Law Department

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Date: December 28, 2004

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